

# PATENT SPECIFICATION

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## (54) TELEVISION FAULT ANNUNCIATOR

(71) We, BRITISH BROADCASTING CORPORATION, of Broadcasting House, London, W1A 1AA, a British body corporate, do hereby declare the invention, for which we pray that a Patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

In many applications where low power unattended television transmitters are used, if a fault occurs on these transmitters the viewers receiving their outputs are very often unable to distinguish between a fault in the received signal and a fault in their receivers. This can give rise to alarm on the part of the viewer or even cause them to change channels which can, sometimes, be an undesirable action from the point of view of the broadcasting authority. This invention relates to a device which will enable information to be sent to the viewer giving information regarding known deficiencies in the picture. The deficiencies envisaged are those which lead to an inferior picture such as a very noisy picture due to transmitter power being reduced or loss of colour due to the high frequency part of the signal being lost, these being two examples.

According to the present invention, there is provided a television transmitter comprising monitoring apparatus adapted to detect at least one fault condition of the transmitter, means for deriving synchronizing pulses from the signal fed to the transmitter, and a character generator responsive to the synchronizing pulses and to the output of the monitoring apparatus to superimpose a video signal representing a predetermined message indicative of the fault condition on the video signal of the signal being transmitted only when the fault condition is detected.

A particular advantage of the invention is that only the viewers served by a faulty transmitter receive the message indicating the fault.

[Price 33p]

Preferably, the monitoring apparatus can distinguish between different fault conditions and the character generator is selectively capable, under control of the monitoring apparatus, of producing different video signals representing corresponding different messages such as "Transmitting on low power" and "Colour not being transmitted". The complexity of the messages which can be used depends upon the capacity of the character generator which can consist of a suitably programmed read only memory (ROM), such devices being commercially available.

If the transmitter receives a video input, the video signal from the character generator can be added in the video section of the transmitter. If the transmitter only handles RF, the video signal from the character generator can be modulated on to an RF carrier and then added to the signal received by the transmitter. An embodiment of the invention employing the latter alternative will now be described by way of example with reference to the block diagram constituting the sole Figure of the accompanying drawing.

The RF input is applied to a transmitter feeding an aerial 11. Monitoring apparatus 12 detects different fault conditions and sends corresponding fault signals to a logic circuit 13 which encodes each fault signal into a corresponding fault message by providing inputs to a ROM character generator 14 and store for the messages. The character generator is of known type capable of generating in each of a succession of character locations any one of the letters of the alphabet or a space. The generation of the symbols and the establishing of the character positions are synchronised in known manner to the scanning raster of the television signal by applying synchronising pulses to the character generator. These pulses are derived from the incoming RF signal by a demodulator and synchronising pulse separator 15.

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5 The signals from the logic circuit 13 enter codes in a succession of storage locations in the store included in the character generator 14, these locations corresponding to the succession of character positions. Thus, for the message "Colour not being transmitted", the codes would run C, O, L, O, U, R, space, N, O, T, space, etc.

10 The character generator 14 responds to these codes and the contents of the ROM to generate in known way, digital signals so synchronised with respect to the field and line synchronising pulses as to establish a video signal representing the message set up by the logic circuit 13, suitably positioned on the picture. The video signal is modulated on to the RF carrier by a modulator 16 and added to the output of the transmitter 10 at a later stage thereof. Although the fault message can be displayed so long as the fault persists it is preferred to flash the message at intervals, say 10 second displays every 2 minutes. To this end the character generator 14 can be gated on and off by a timer 17 which is triggered by the monitor 12 and establishes the message flashing sequence. When the fault is cured, the message automatically ceases.

30 There is obviously great flexibility of design as to the faults to be distinguished and the nature of the messages to be transmitted. For example, in a Welsh language programme, the message can be given in Welsh or in both Welsh and English.

35 WHAT WE CLAIM IS:—

1. A television transmitter comprising monitoring apparatus adapted to detect at

least one fault condition of the transmitter, means for deriving synchronizing pulses from the signal fed to the transmitter, and a character generator responsive to the synchronizing pulses and to the output of the monitoring apparatus to superimpose a video signal representing a predetermined message indicative of the fault condition on the video signal of the signal being transmitted only when the fault condition is detected.

2. A television transmitter according to claim 1, wherein the monitoring apparatus is adapted to distinguish between different fault conditions and the character generator is adapted selectively to superimpose under control of the monitoring apparatus, different video signals representing different messages corresponding to the different fault conditions on the video signal of the signal being transmitted.

3. A television transmitter according to claim 1 or 2, wherein the transmitter receives an RF signal, comprising means for modulating the video signal to be superimposed on the video signal of the signal being transmitted on to a carrier and for adding the modulated carrier to the signal received by the transmitter.

4. A television transmitter substantially as hereinbefore described with reference to, and as illustrated in, the accompanying drawing.

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